National Aeronautics and Space Administration

The Concept

Small **B**usiness **I**nnovation **R**esearch
Small Business **T**echnology **TR**ansfer

Vision | Innovation
Infusion | Collaboration
Commercialization

Volume 3, Number 3 | Fall 2012

Executive Corner

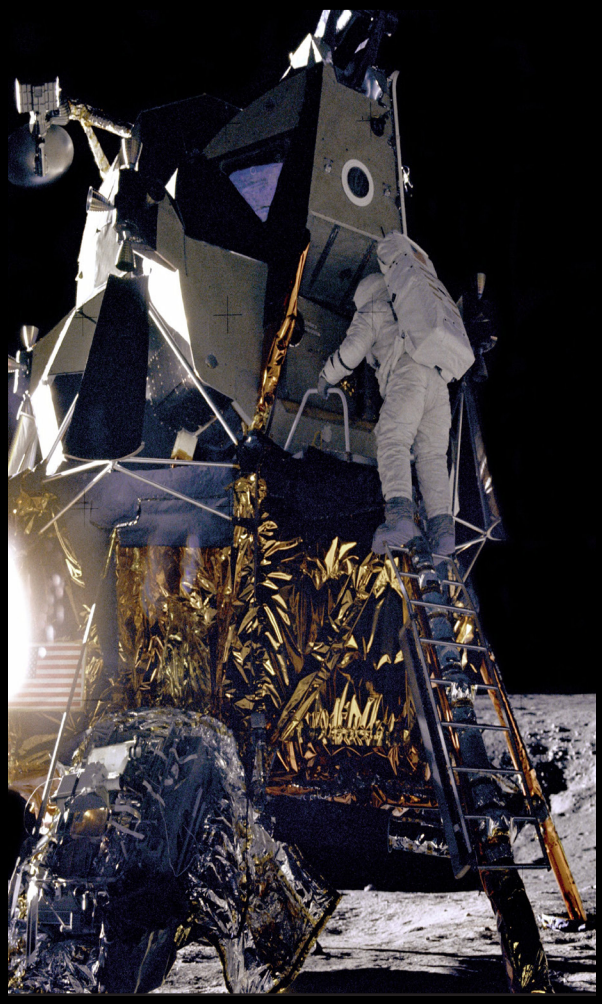
Since I joined the SBIR/STTR Program a little over a year ago, I have learned a great deal about the way our internal management structure implements the program. This insight into program operations is only one component in how we can best serve you, the Small Business Concerns and Research Institutes.

As 2012 comes to an end and 2013 begins with new opportunities and challenges, I would like to focus on how we help our SBIR and STTR partners transition from our program to commercial success. I invite you to contribute your ideas to how we may best do this by getting in touch with us, particularly at events such as NASA Technology Days in Cleveland, Ohio on November 28-30th. Come meet with me, SBIR Technology Infusion Managers, and other program managers to share your experiences and ideas on what small businesses like yourselves need from us as a first-time NASA proposer or veteran SBIR awardee to commercialize technologies.

Your support in the program drives us to constantly make improvements. We plan on being with you every step of the way and ask that you be patient with all of the changes that will take place in the new year. Finally, as a reminder, the 2012 General and Select Solicitations come to a close on November 29th. We are excited to see the proposals that will propel this Nation and NASA forward into 2013 and beyond.

Sincerely,

Richard Leshner
Program Executive
NASA SBIR/STTR



FEATURE CONTENT

** This is an interactive document. Mouse over links and images for further details.*

Technology Days Showcases NASA Programs & Innovations

Join NASA for "Technology Days" in Cleveland, Ohio from November 28–30, 2012. This three-day event and technology showcase will bring together a broad community of stakeholders from industry, academia, and the U.S. government to engage in strategy development, partnership building, and implementation of ways to foster technology transfer and innovation.

The objectives of the event are twofold:

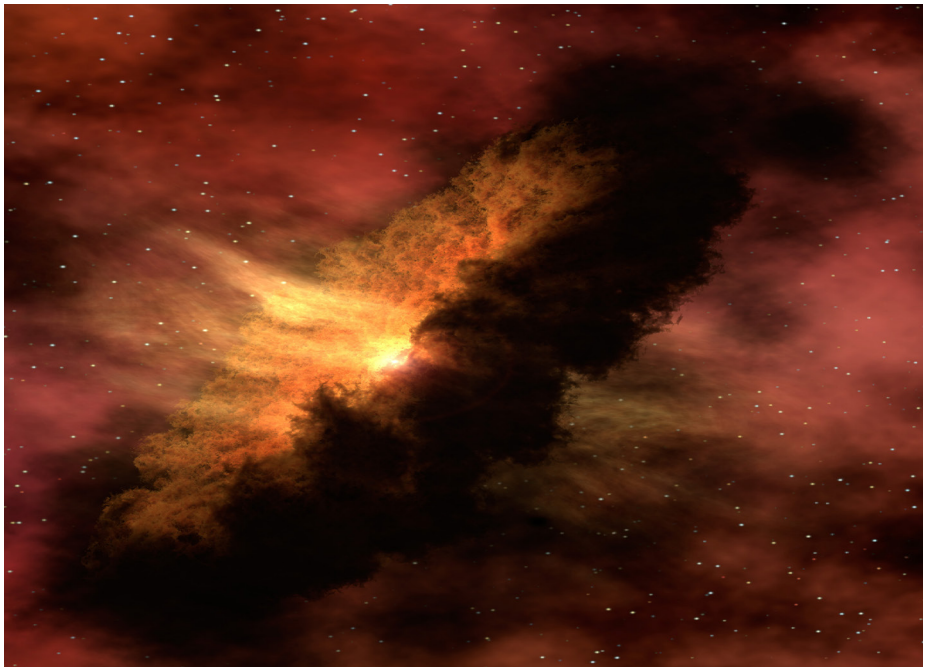
Day 1: Technology and Innovation at NASA General Session: An introduction and status update of NASA's technology programs that explores new approaches to current missions and strives to address challenges for NASA's future missions. Presentations will delivered by key NASA program executives and leaders throughout the day.

Day 2 and 3: A technology exposition will showcase NASA-developed technologies to individuals interested in commercialization or business development partnerships.

Get a comprehensive overview of NASA's technology programs for space exploration and aeronautics, and discover innovative and advanced technologies which are stimulating the economy and sustaining our nation's global competitiveness. NASA's Tech Days are free and open to the public, registration is required.

For more information and to register go to: **www.aiaa.org/nasatechdays**

Feature Event



SBIR/STTR Reauthorization Changes

As the SBIR/STTR program continues into 2017 through the recent reauthorization, many noteworthy changes will take place. Listed below, you will find some examples of the changes being implemented:

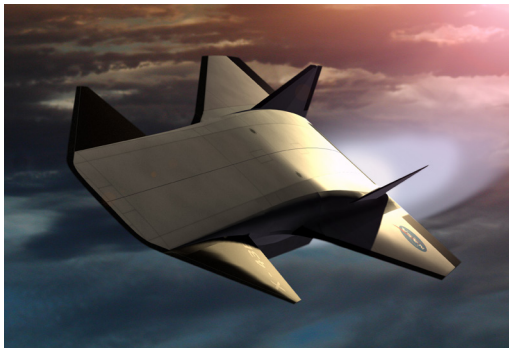
- For FY 2012, SBA has issued guidelines to the agencies that the set-aside share is increased to 2.6%, prior to the new Policy Directives being issued.
- STTR award sizes (guideline amounts) are increased to match SBIR amounts: $150,000 for Phase I and $1 million for Phase II. Awards may not exceed guideline amounts by more than 50% ($225,000 for Phase I and $1.5 million for Phase II).
- The amount of SBIR funds permitted to be used for technical assistance is raised from $4000 to $5000 per award per year..
- Firms that are majority-owned by multiple venture capital operating companies (VCOCs), hedge funds and/or private equity firms are eligible to receive SBIR and STTR awards.
- All applicants will be required to register with the Company Registry Database at www.sbir.gov at the time of application.
- Phase I to Phase II Transition Rate: Beginning 1/1/2013, Phase I applicants that have won prior SBIR/STTR Phase I awards, must meet agency-specific standards for progress towards Phase II.

For a complete list of reauthorization changes, visit:
www.sba.gov/about-sba-info/174308

Tell Us Your Story

An important objective of the NASA SBIR/STTR Program is to enable small businesses to achieve success in their endeavors. One method we use is to highlight successful projects in this newsletter, calling them "success stories." You can find more at our website: http://sbir.gsfc.nasa.gov/SBIR/success.htm.

If you would like to submit your SBIR/STTR technology for consideration into our success stories gateway, please email:
arc-sbir-Outreach@mail.nasa.gov

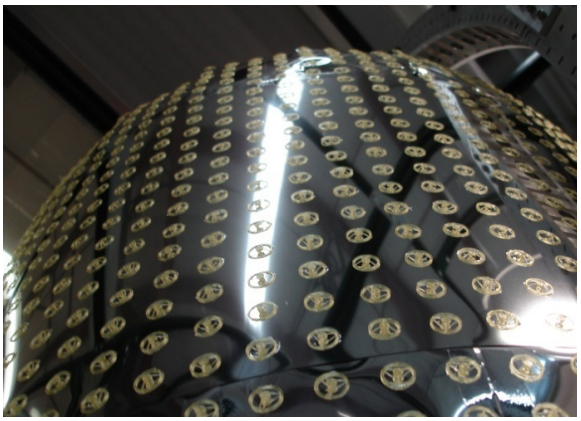


NASA SBIR/STTR 2012 Solicitations

NASA opened its 2012 Phase I SBIR/STTR Solicitation and 2012 Select Solicitation on September 17, 2012. Proposals are due no later than 5:00 pm EDT on November 29, 2012. NASA's Electronic Handbook must be used to submit proposals and prior registration is required.

For more information on SBIR/STTR research topics, rules, and procedures, visit:
www.sbir.nasa.gov

Next-Gen Insulation Could Enable Long Duration Missions

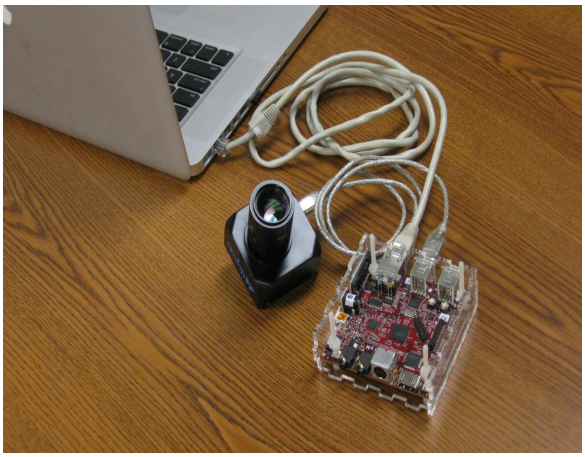


Quest scientists and engineers, teaming with Ball Aerospace, have developed a next generation multilayer insulation. Innovative Integrated MLI offers advantages over current thermal insulation, and could help solve NASA's requirements for storing cryopropellants, enabling long duration missions beyond Earth's orbit. NASA has funded Quest with multiple SBIR awards, from Phase I's through Phase III procurement, which has allowed Quest to conduct R&D and mature our technologies.
Quest has developed different versions of our Discrete Spacer Technology™ engineered for specific applications, such as protecting cryopropellants of launch vehicles and fuel depots; providing micrometeoroid/orbital debris protection; versions that operate both in-air and on-orbit; and Load Bearing MLI that self supports a Broad Area Cooling shield will be tested at NASA centers this Fall. Load Responsive MLI (LRMLI) provides the highest performance insulation for LH2 tanks for hydrogen-powered aircraft.

Quest's first products are designed for aerospace use, but we are also designing advanced thermal insulations for terrestrial use. LRMLI offers ¼" thick insulation for refrigerator/freezers with equal performance to 16" of foam insulation, providing new design opportunities and lower energy usage. Wrapped MLI for industrial insulated hot or cold transfer pipe has excellent prototype performance. Quest building insulation panels might one day provide R2500 per inch, compared to R4 for current fiberglass insulation!

www.quest-corp.com

Optical Navigation System for Intersatellite Communication



The Optical Navigation System (ONS) was developed by Princeton Satellite, employs two articulated cameras on a rotating platform to obtain both an attitude fix and a navigation fix. The estimators for both attitude and navigation employ unscented Kalman Filters with nonlinear dynamical models. An IMU provides the attitude dynamics base. Under Princeton Satellite Systems IR&D, an optical communication system was developed, tested and integrated in the Optical Navigation System and is known as the Integrated Communications and Optical Navigation System (ICONS). This could be used for intersatellite communication and for timing information. A patent was recently submitted for ICONS. A test version with miniature fixed cameras is under development to test the ONS software in a 3U CubeSat form factor. Two CubeSats would fly and intersatellite optical communications would also be tested.

ONS is being applied to a small satellite for asteroid missions. ONS would be used for absolute navigation and navigation relative to the asteroid. The mission would use an ion thruster and would benefit from frequent navigation updates. Onboard navigation would reduce operations costs since ONS enables on-board guidance and navigation.

www.psatellite.com

Collaborate

NASA SBIR/STTR
NASA's SBIR/STTR website provides details on the programs, solicitations, resources, and more.

NASA SBIR Program Contacts
Program Management and center points of contact can be reached via email or phone to answer any questions you may have.

NASA SBIR Success Story Gateway
Web site enabling small businesses to achieve success in their endeavors by highlighting successful projects.

TechSource
Information on current and recently completed SBIR/STTR Phase II projects. Facilitates the transition of resulting technologies into further development, investment, and utilization for NASA.

Hallmarks & Success Videos
A collection of short videos about successful companies that have participated in the SBIR and STTR programs.

Tech Briefs
Featuring exclusive reports of innovations developed by NASA and its industry partners, contractors that can be applied to develop new improved products and solve engineering or manufacturing problems.

Technology Innovation
Providing information about NASA's technology needs and opportunities, as well as interesting facts and feature articles about our successes.

Spinoff
Providing NASA's premier annual publication of successful commercial and industrial applications of NASA sponsored technology.

Office of the Chief Technologist
OCT is responsible for developing and executing innovative technology partnerships, technology transfer and commercial activities and the development of collaboration models for NASA.

Solicitations Dates

Sept 17- Nov 29
SBIR/STTR 2012 Phase I Solicitation

Sept 17- Nov 29
SBIR Select 2012 Phase I Solicitation

Mark Your Calender

Nov 28
SBIR/STTR Phase I Proposal Development
(Newark, NJ)

Nov28-30
NASA Technology Days
(Cleveland, OH)

Nov 29
SBIR Cost Proposal Preparation
(Newark, NJ)

Dec 11
Strategic Alliances Workshop
(Scottsdale, AZ)

Please send general comments and questions to:
arc-sbir-Outreach@mail.nasa.gov

http://sbir.gsfc.nasa.gov/SBIR/newsletter.html